

I claim:

1. A sealing and anchoring apparatus for use in a tubular member, the apparatus  
5 comprising:

-a top swage member disposed within said tubular member, said top swage  
member having a longitudinal center of axis;

-a first sealing member disposed about said top swage member, said first sealing  
member containing a first plurality of circumferential ribs disposed about said first sealing  
10 member, and wherein said first sealing member has a top end and a bottom end;

-a second sealing member attached to said first sealing member, said second  
sealing member containing a second plurality of circumferential ribs disposed about said second  
sealing member, and wherein said second sealing member has a top end and a bottom end;

-a bottom swage member disposed within said second sealing member, said bottom  
15 swage member having a longitudinal center of axis;

-a setting means for driving said top swage longitudinally downward relative to  
said top swage's longitudinal center axis and for driving said bottom swage longitudinally upward  
relative to said bottom swage member's center of axis.

20 2. The apparatus of claim 1 further comprising:

- an extension member disposed between said first sealing member and said second  
sealing member, said extension member having a first end connected to the bottom end of said

first sealing member and a second end connected to the top end of said second sealing member.

3. The apparatus of claim 2 wherein said top swage member has a first cylindrical surface that extends to a second conical surface, and wherein said first cylindrical surface is concentrically disposed within said first sealing member.

4. The apparatus of claim 3 wherein said bottom swage member has a first cylindrical surface that extends to a second conical surface, and wherein said first cylindrical surface is concentrically disposed within said second sealing member.

5. The apparatus of claim 4 wherein said ribs of said first sealing member is a series of grooves, said grooves having a radius of curvature of approximately 0.0470 inches, and wherein said grooves have a height of approximately 0.033 inches.

6. The apparatus of claim 5 wherein said ribs of said second sealing member is a series of grooves, said grooves having a radius of curvature of approximately 0.0470 inches, and wherein said grooves have a height of approximately 0.033 inches.

7. The apparatus of claim 6 wherein said first sealing member further comprises an elastomeric seal.

8. The apparatus of claim 6 wherein said second sealing member further comprises an

elastomeric seal.

9. The apparatus of claim 6 wherein said first sealing member and said second sealing member is comprised of a metal having a hardness of 105 or less on the Rockwell B scale.

10. The apparatus of claim 6 wherein said top swage member and said bottom swage member is comprised of a metal having a hardness of 108 or higher on the Rockwell B scale.

11. A method of sealing and anchoring a device within a tubular member comprising:  
-positioning the device in an internal diameter wall of the tubular member, the device comprising: a top swage member disposed within the tubular member, said top swage member having a longitudinal center of axis; a first sealing member disposed partially about said top swage member, said first sealing member containing a first plurality of circumferential ribs disposed about said first sealing member, and wherein said first sealing member has a top end and a bottom end;

-driving said top swage longitudinally downward relative to said top swage's longitudinal center of axis with a setting tool member, said setting tool member being selectively attached to the device;

-expanding the first sealing member radially outward;

-embedding at least one of said first plurality of circumferential ribs into the inner diameter wall;

-sealing the device within the internal diameter wall with at least one of said first

plurality of circumferential ribs;

-anchoring the device within the internal diameter wall with at least one of said first plurality of circumferential ribs.

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12. The method of claim 11 wherein said device further comprises: a second sealing member attached to said first sealing member, said second sealing member containing a second plurality of circumferential ribs disposed about said second sealing member, and wherein said second sealing member has a top end and a bottom end; a bottom swage member disposed partially within said second sealing member, said bottom swage member having a longitudinal center of axis; and wherein the method further comprises:

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-driving said bottom swage longitudinally upward relative to said bottom swage's longitudinal center of axis;

-expanding the second sealing member radially outward;

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-embedding at least one of said second plurality of circumferential ribs into the inner diameter wall;

-sealing the device within the internal diameter wall with at least one of said second plurality of circumferential ribs;

-anchoring the device within the internal diameter wall with at least one of said second plurality of circumferential ribs.

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13. The method of claim 12 wherein the first sealing member further comprises a first elastomeric member circumferentially disposed thereon and wherein the step of expanding the first

sealing member radially outward includes:

- forcing the first elastomeric member against the internal diameter wall;
- providing a secondary seal for the device within the internal diameter wall.

5 14. The method of claim 13 wherein the second sealing member further comprises a second elastomeric member circumferentially disposed thereon and wherein the step of expanding the second sealing member radially outward includes:

- forcing the elastomeric member against the internal diameter wall;
- providing a tertiary seal for the device within the internal diameter wall;
- and wherein the step of driving said top and bottom swage upward and downward

10 includes:

- pumping a hydraulic fluid;
- forcing a power piston in the tool in an upward direction so that said lower swage

15 is moved upward;

- forcing an outer sleeve in the tool in a downward direction so that the upper

swage is moved downward.

15. The method of claim 14 further comprising:

- shearing a shear ring operatively attaching the device to the setting tool means;
- retrieving the setting tool means from the tubular member.

20 16. An apparatus for sealing and anchoring within a tubular member, the apparatus

comprising:

-a top swage member disposed within said tubular member, said top swage member having a longitudinal center of axis and having a first end and a second end;

-a first sleeve being at least partially disposed within the first end of said top swage, said first sleeve containing a first plurality of circumferential ribs disposed thereon, and wherein said first sleeve has a top end and a bottom end.

17. The apparatus of claim 16 further comprising:

-a second sleeve attached to said first sleeve, said second sealing member containing a second plurality of circumferential ribs disposed thereon, and wherein said second sleeve has a top end and a bottom end;

-a bottom swage member disposed within said second sealing member, said bottom swage member having a longitudinal center of axis and having a first end and a second end, and wherein said first end is disposed within said bottom swage member.

18. The apparatus of claim 17 further comprising:

-a setting means for driving said top swage longitudinally downward relative to said top swage's longitudinal center axis and for driving said bottom swage longitudinally upward relative to said bottom swage's center axis.

19. The apparatus of claim 18 wherein said ribs of said first sealing member is a series of grooves, said grooves having a radius of curvature of between 0.030 inches to 0.060 inches, and

wherein said ribs of said second sealing member is a series of grooves, said grooves having a radius of curvature of between 0.030 inches to 0.060 inches.

20. The apparatus of claim 19 wherein said first sleeve has disposed thereon a first elastomeric seal and wherein said second sleeve has disposed thereon a second elastomeric seal.

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